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# Apples from Canada



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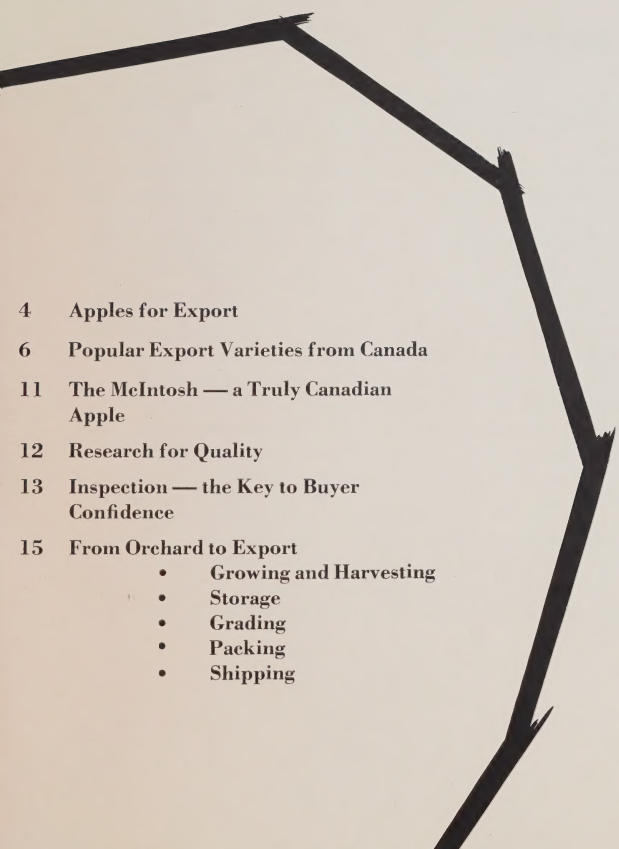


# Apples from Canada

Published by authority of  
the Hon. Mitchell Sharp  
Minister of Trade and Commerce  
Ottawa, Canada

A stylized illustration featuring a green leaf with a yellow-green center and a thick black outline, positioned at the top left. Below it is a large, solid red octagon with a thick black outline, occupying the lower half of the page. The word "CONTENTS" is printed in bold, black, sans-serif capital letters on the right side of the red octagon.

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## **APPLES FOR EXPORT**

*Apples from Canada are renowned on world markets. They have vivid colouring, crisp flesh, zesty flavour — with just the right amount of sweetness — and dependable quality.*

*Canadians have been growing apples for almost three and a half centuries and exporting them for more than a century. Canada's rich soil and northerly climate are ideally suited to the production of apples of the highest quality.*

*Sunny days, cool nights and an occasional nip of frost before harvesting give many Canadian varieties the rich, red hue that customers find so appealing. The yellow and green varieties, too, are temptingly bright in colour.*

*Canadian apples for export are selected from the best of quality crops and harvested by the most modern methods. Their peak condition is maintained in large cold-storage plants until, as orders come in, they are sized, graded and packed, meanwhile undergoing two rigorous Government inspections. Excellent transportation facilities then speed them across the United States border or to ocean ports for dispatch to overseas customers.*

*The export business is vital to the Canadian apple industry, and growers, packers and processors are constantly striving to improve techniques. The industry's aim is to present its product on the world market in the finest possible condition.*

*Canadian apples are exported to most parts of the United States and to more than 35 other countries around the globe. A steady supply of apples is available, year in and year out, to customers abroad. More than 3,500,000 bushels are exported annually, and the amount is increasing each year.*

*More and more importers are coming to realize the advantages of buying*

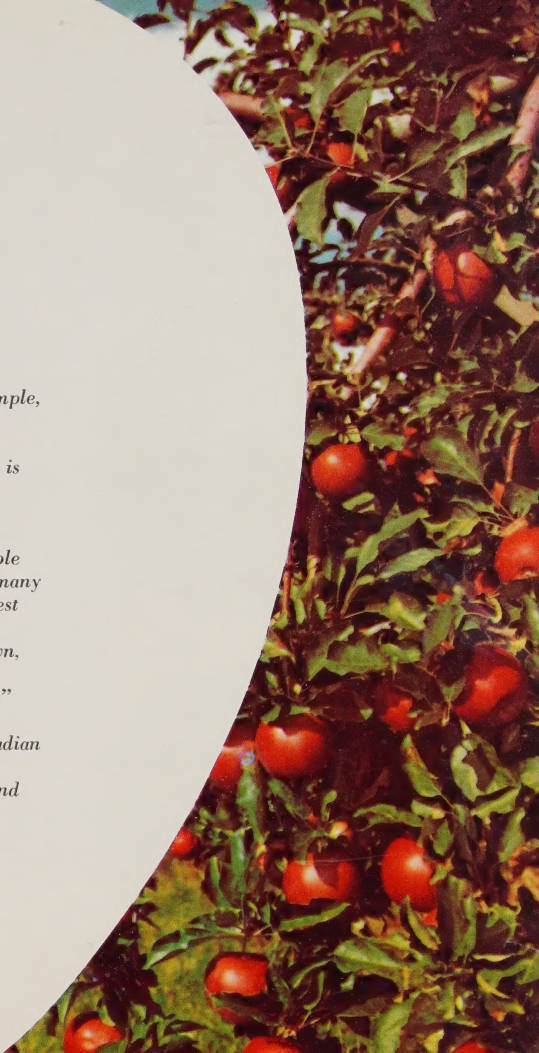
*Canadian apples. Buyers all over the world know that a quality product creates confidence, a stronger demand — and greater profits.*

**You can buy Canadian apples with confidence.**

*Canadian apples are preferred in many countries — British buyers, for example, regularly pay a premium for apples from Canada because they are recognized as more uniform in quality and pack. An importer in Britain says, “Canadian apples have always enjoyed a very high reputation and we appreciate that this is largely due to the advanced methods of growing and storage, plus the efforts expended by Canadian growers and shippers to ensure that the fruit eventually reaches the consumer in first-class condition.”*

*This comment comes from the chief buyer of a large fruit and vegetable company in the United States; “Despite the excellent package supplied by the many fine growers in our stateside apple districts, the outstanding quality and truly honest pack of the Canadian apples will not permit us to overlook this fine product, but, on the contrary, compel us frequently to show a preference for the Newtown, Red Delicious and most certainly the McIntosh from Canada. This we all attribute to the skill and comprehensive program of the Canadian apple industry.”*

*In the following pages you will find answers to many of the questions you may have about Canadian apples. Should you have other queries, the Canadian Government Trade Representative in your area will be pleased to obtain the answers for you. Alternatively, inquiries may be directed to the Agricultural and Fisheries Branch, Department of Trade and Commerce, Ottawa, Canada.*



## POPULAR EXPORT VARIETIES FROM CANADA

NOTE: For red and red-striped varieties, the percentages of colour in the Government-regulated minima quoted refer to that shade considered wholly characteristic of the variety when fully mature. Canadian apples are exported in cartons holding 96, 120, 140, 160, 175 or 180, 200 and 216. These counts are subject to Government regulation and inspection. Canadian apples are graded in sizes to suit all world markets.



### McINTOSH:

One of the world's finest apples and excellent for every purpose. Known far and wide for its appealing aroma and delicious flavour. Medium size.

Red Colour Minima: Canada Extra Fancy Grade 55%

Canada Fancy Grade 30%

### RED DELICIOUS:

A strain of the regular Delicious but with a higher red. Excellent dessert apple, also good for salads. Creamy-hued flesh, very crisp.

Red Colour Minima: Canada Extra Fancy Grade 65%

Canada Fancy Grade 40%







**GOLDEN RUSSET:**

Golden-brown with firm flesh. Distinctive, mildly aromatic flavour. Excellent for dessert, salads and cooking.

**CORTLAND:**

Red-striped, white-fleshed. Similar to McIntosh but flatter, larger, redder and firmer, though equally juicy. Mildly aromatic flavour. Excellent for dessert, salads and cooking.

Red Colour Minima: Canada Extra Fancy Grade 55%  
Canada Fancy Grade 30%





### **WINESAP:**

Excellent cooking and good dessert apple. Late-harvested, slightly tart in flavour. Slightly lighter red than Red Delicious.

Red Colour Minima:	Canada Extra Fancy Grade	65%
	Canada Fancy Grade	40%

### **CRIMSON GRAVENSTEIN:**

Juicy, crisp, highly flavoured. Red-striped on yellow. Excellent for dessert, salads and cooking — notably for apple sauce.

Red Colour Minima:	Canada Extra Fancy Grade	55%
	Canada Fancy Grade	30%





**NEWTOWN:**

Green, often with yellow tinge. Rich, tangy flavour. Firm, crisp flesh. Excellent for both eating and cooking.

**RED ROME BEAUTY:**

Red-striped. Known as the best apple for baking, also good for dessert and salads. Even balance of sweetness and tartness. Cooks firm, with low shrinkage.

Red Colour Minima:	Canada Extra Fancy Grade	65%
	Canada Fancy Grade	40%







### **GOLDEN DELICIOUS:**

Bright gold in colour. Flesh is juicy and fairly firm. One of the finest dessert apples grown, also suitable for salads. Cooks firm.

### **SPARTAN:**

Relatively new variety, produced by crossing McIntosh with Newtown. Excellent all-purpose red apple with unusually small core. Sweet, distinctive flavour. Flesh crisp, good for eating. Cooks soft and smooth.

Red Colour Minima: Canada Extra Fancy Grade 65%  
Canada Fancy Grade 40%



## THE McINTOSH — A TRULY CANADIAN APPLE

"For many years we have enjoyed the privilege of handling apples from several of the provinces of Canada, and in increasing quantities," says a representative of a large marketing co-operative in Britain. "Canada is particularly renowned for its McIntosh Red, a brightly coloured and first-class dessert apple, the parallel of which cannot be produced in most countries of the world, because of the climatic and growing conditions required."

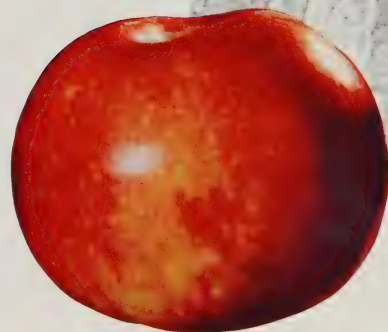
A supermarket buyer in the United States says: "We buy Canadian McIntosh apples because they find such ready customer acceptance."

The McIntosh, one of the most popular apple varieties in the world, originated in Canada—from a single tree grown by a Scottish immigrant, John McIntosh.

Shortly before the beginning of the 19th century, McIntosh found 20 wild apple trees on his land at Dundela, Ontario — just south of Ottawa, Canada's capital — and planted seedlings from them. The results from one particular tree were so striking that he began selling seedlings from it. Every McIntosh apple tree in the world is descended from that original Canadian tree.

In those days it was not understood that apples do not run true to seed, but are produced by grafting a bud from the desired species onto a suitable root stock. Consequently, none of the several seedling orchards then established produced the true McIntosh. It was not until 1835 that John McIntosh's son, Allan, successfully reproduced the original species, through grafting and budding techniques learned from an itinerant farmhand.

The McIntosh now accounts for about 40 per cent of the total apple production in Canada and is known and prized in many parts of the world.





## RESEARCH FOR QUALITY

Canada's many federal and provincial research stations, in all fruit-growing areas, have aided the apple industry greatly over the years — and customers abroad receive the benefits of their work.

Canadian research achievements include the development of improved methods of controlling weeds and grass around orchard trees. Promising experiments in mutation breeding of apple species have been conducted. Through research, lead arsenate has been eliminated from orchard spraying — thus enabling Canadian apples to meet the residue tolerances of all countries.

One of the most important achievements of Canadian research has been the development of an automatic low-volume orchard sprayer. It revolutionized orchard spraying in Canada and has been adopted in many other fruit-growing areas around the world. It reduces capital investment, eliminates much unpleasant labour and sharply cuts down the quantity of spray chemicals used.

In the field of apple-processing, Canadian researchers pioneered in the technique of adding Vitamin C to apple juice and in the production of “opalescent” apple juice. They have successfully experimented with a superior new type of apple-pie filling.

Canada's Department of Agriculture, in conjunction with Atomic Energy of Canada Limited, is examining the possibilities of extending the commercial keeping life of apples by means of irradiation. Experimentation with a gammacell, which gets its radiation from Cobalt 60, has shown promising results.

Continuing research by Canadian scientists can be expected to lead to further advances in the apple industry.





## **INSPECTION — THE KEY TO BUYER CONFIDENCE**

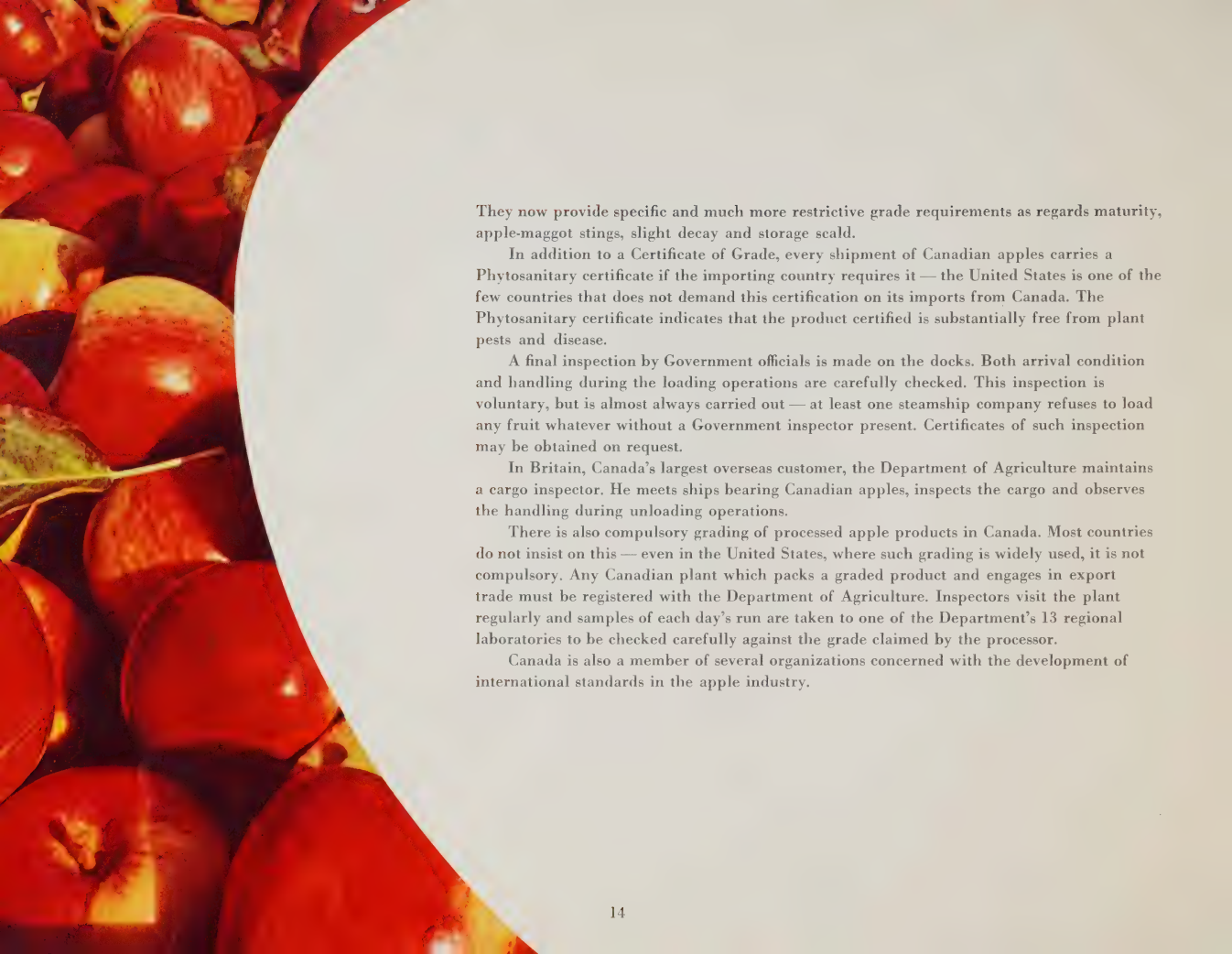
The consistent quality of apples exported from Canada is ensured by the Government's intensive inspection program. From orchard to docks, apples for export are subjected to a series of careful examinations by Government officials. Canada has a corps of trained inspectors whose job it is to make sure that only first-class apples and apple products, in excellent condition, are sold to its customers. Inspection schools are held regularly, to guarantee the uniform application of grade standards and regulations as to quality, appearance, size and proper packing.

The Federal Government, in co-operation with the authorities in every apple-producing province, has an orchard-certification program, involving a pre-harvest inspection. This ensures that the apples are free of insect damage, disease and harmful spray residue.

Canadian exporters — who must be licensed under the Canadian Agricultural Products Standards Act — maintain strict surveillance over quality and all aspects of handling. In addition, federal authorities carry out rigorous inspections at two points in each packing plant. The first plant inspection, while the apples are being graded, ensures that grade standards are maintained. After the apples are packed they are examined again, to make sure that there are no flaws and that they are properly packed. These inspections are compulsory and a certificate of inspection must be obtained for all shipments destined for export.

Controlled Atmosphere storage plants are also constantly checked by both federal and provincial inspectors, who make sure that proper levels of oxygen, nitrogen and carbon dioxide are maintained.

The Canadian Government, in 1965, tightened the regulations for apple exports.



They now provide specific and much more restrictive grade requirements as regards maturity, apple-maggot stings, slight decay and storage scald.

In addition to a Certificate of Grade, every shipment of Canadian apples carries a Phytosanitary certificate if the importing country requires it — the United States is one of the few countries that does not demand this certification on its imports from Canada. The Phytosanitary certificate indicates that the product certified is substantially free from plant pests and disease.

A final inspection by Government officials is made on the docks. Both arrival condition and handling during the loading operations are carefully checked. This inspection is voluntary, but is almost always carried out — at least one steamship company refuses to load any fruit whatever without a Government inspector present. Certificates of such inspection may be obtained on request.

In Britain, Canada's largest overseas customer, the Department of Agriculture maintains a cargo inspector. He meets ships bearing Canadian apples, inspects the cargo and observes the handling during unloading operations.

There is also compulsory grading of processed apple products in Canada. Most countries do not insist on this — even in the United States, where such grading is widely used, it is not compulsory. Any Canadian plant which packs a graded product and engages in export trade must be registered with the Department of Agriculture. Inspectors visit the plant regularly and samples of each day's run are taken to one of the Department's 13 regional laboratories to be checked carefully against the grade claimed by the processor.

Canada is also a member of several organizations concerned with the development of international standards in the apple industry.

## FROM ORCHARD TO EXPORT

### Growing and Harvesting

Each year there is an increasing demand for Canadian apples on the world market. To meet this demand, Canadian growers are steadily expanding their orchard acreage in all of the major apple-producing areas. Apples are grown commercially in certain regions of five Canadian provinces, where climatic and soil conditions favour the production of quality fruit. These include the Okanagan Valley in British Columbia, most of the counties in the St. Lawrence Valley and around the lower Great Lakes in Southern Ontario, the Eastern Townships and the Montreal area in Quebec, the St. John River Valley in New Brunswick, and the Annapolis Valley in Nova Scotia.

In establishing new orchards, growers must bear in mind the Government's tight control through its orchard-certification program, and many factors must be taken into account.

The soil must be either heavy or deep and there must be an adequate water supply and good drainage. Growers must have a thorough knowledge of soil management, which includes intercropping, sod culture, mulching, grass and weed control, the proper use of fertilizers and special soil foods, essential spraying to prevent disease, and mouse control.

Proper planting ensures that trees will have sufficient sunlight to develop apples of excellent quality and colour. The apple grower must be familiar with techniques of cross-pollination, budding and grafting, pruning and thinning — all absolutely vital to the production of first-class apples.

Canadian growers use the most advanced techniques for harvesting to ensure maximum shipping and keeping qualities. Maturity is determined by spot-check picking, with a pressure test and an iodine test to determine starch content — the more starch, the less mature. Tests are made at several places in the same orchard to allow for different terrain and levels.







Proper maturity ensures high quality and excellent flavour, and apples go into storage in that condition.

Another consideration is the number of days elapsing from full bloom to pick; varieties differ in maturing time. One province has dates set by inspectors from its Department of Agriculture for the harvesting of each variety.

Picking is usually done with both hands, and the apples are placed with care in a basket or other container. Then they are put into a bulk bin. Canadian growers have found bulk bins more efficient than the field crates which were used in the past. The bins help to eliminate bruising and reduce labour costs, resulting in lower priced apples. Harvesting operations are continually checked by field supervisors.

The bins of apples are taken by truck — driven slowly, to prevent bruising — to the storage plant. Domestic customers sometimes buy direct from the orchard.

## Storage

Canadian apples destined for export are put into storage, still in the bulk bins, on the day they are picked. This ensures that their high quality and fine condition are maintained as long as possible. Two types of storage are used: conventional cold storage and Controlled Atmosphere (CA) storage.

In conventional cold storage the apples are cooled rapidly to about 32 degrees Fahrenheit. They continue to mature normally, but the temperature control cuts down respiration, thus extending the life of the fruit. The high humidity level in the storage vault keeps the apples crisp and succulent. Conventional cold storage keeps most varieties in first-class condition until January, and some varieties until February or March.

Controlled Atmosphere storage is a more advanced form of cold storage in which not only temperature and humidity but also the amounts of carbon dioxide, oxygen and nitrogen are controlled, so that loss by respiration is very low. A sealed room is required for this process and care must be taken to keep the atmosphere constant. These extra precautions add to the cost of the product, but extend the storage life appreciably. Some varieties of Canadian apples are now available for export at times when they were previously unobtainable.

In CA storage, maturing is slowed down and texture is maintained. The apples almost literally go to sleep — in fact, CA apples are referred to in the industry as Sleeping Beauties.

Some people with trading experience in Canadian apples have an educated preference for them. Suppliers can now cater to that taste for a longer season each year.



## Grading

Canadian apples are graded and prepared for export just before they are shipped abroad. During this process — as at all other times — they are handled with extreme care to prevent bruising.

In an increasing number of Canadian plants, grading is a partially automated process. When a bulk bin of apples is removed from the storage room, it is placed in a tank of water. The bin sinks slowly to the bottom and the apples float up out of it and onto an angled conveyor, in water propelled by a high-capacity pump. Rollers on the conveyor revolve each apple slowly to remove the water. One section of the conveyor has brushes beneath, which further remove water and clean the fruit.

Then the apples pass through a machine that sorts them into various sizes. They are graded by hand and placed directly into cartons — also by hand.

Canadian grading standards are among the strictest in the world and are subject to confirmation by inspectors of the Canada Department of Agriculture — which issues a certificate of grade only when fully justified. Grade requirements are more stringent for export than for domestic sale — a fact which reflects Canada's interest in maintaining a world-wide reputation for products of the highest quality.

Canadian apples are graded according to appearance and quality. Appearance includes colour, shape, size and freedom from surface blemishes. Quality includes maturity, freedom from insect pests, injury and decay.

The three grades of fresh apples exported are: Canada Extra Fancy, Canada Fancy and Canada Commercial. Processed apple products are also exported in three grades: Fancy, Choice and Standard.







## Packing

Developments in the packaging of apples for export have given the foreign buyer greater assurance that the fruit will reach its destination in perfect condition.

Wooden apple boxes, in which some bruising was likely to occur, were discarded some years ago by Canadian shippers. A tray-pack carton, with layers of paper-fibre trays moulded into pockets to hold the individual apples, was adopted by most shippers. Hard varieties are still frequently shipped in tray-pack cartons. Manufacturers are experimenting with an improved type of tray-pack carton — with deep pocket trays and post supports — which will provide greater protection to the fruit in transit.

A cell-pack carton has been developed in Canada and is now widely used by Canadian shippers. In this type of carton each apple has its own individual cell, so that no pressure is applied to it from any angle. The carton can withstand rough handling without risk of damage to the apples.

The amended regulations of the Canada Agricultural Products Standards Act contain a Standard Package Schedule which prescribes the exact dimensions of the cells in cartons designed for 20 different sizes of apples.

Other packaging developments introduced by the Canadian apple industry include strong corrugated partitioning and “telescopic” master containers — really two separate cartons, one inverted over the other, providing a double wall all around. Inspectors and buyers can examine the contents of these cartons without tearing them open.

Canadian advances in the packaging of apples for export have been such that other apple-producing countries have over the years come to Canada for advice. As in other aspects of the industry, Canadian know-how is respected by the country's competitors.

## **Ocean Shipping**

After they are packed, apples destined for overseas markets are moved by truck or railway to the nearest port. Excellent ocean service is available from Canadian ports to every major country in the world.

All ships carrying Canadian apples have electrical ventilation, with temperature control. Where longer distances are involved, particularly to warm climates, refrigerated space is desirable and may be obtained at a somewhat higher rate. However, constant improvements are being made in electrical ventilation and the speed of cargo ships is increasing, so that the need for refrigerated space is lessening.

In all Canadian apple-handling ports — Vancouver, Toronto, Montreal, Saint John and Halifax — fork-lift trucks and other mechanical equipment provide fast service and offer protection from the elements and rough handling during the transfer from railway car or storage shed to ship. Heaters are used when necessary to prevent the apples from freezing.

On board ship, the cartons of apples are stowed between decks — where ventilation is better — and in compartments which separate them from other cargo. Apple cartons are stacked not more than eight feet high, to eliminate any chance of crushing.

Most modern ships have such improved facilities as hydraulic-automatic hatches in their cargo compartments and multiple-position deck cranes, which make it possible for loading and discharge to be speeded up without risk of damage to the cargo.



## **BUY CANADIAN — BUY THE BEST**

- Apples from Canada are known for their sparkling flavour and crisp flesh.
- Apples from Canada are grown in the finest orchards by skilled orchardmen.
- Apples from Canada come in varieties to suit every taste.
- Apples from Canada have dependable quality, guaranteed by Government inspection.
- Apples from Canada are in good supply and available for export every year.
- Apples from Canada are packed with care, to reach the buyer in peak condition.
- Apples from Canada are good — and good for you.

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